

RESPONSE TO OFFICE ACTION

Serial No. 10/805,890

Page 3 of 9

IN THE CLAIMS

1. (Currently Amended) A method of plasma etching, comprising:
introducing into an etch chamber a substrate having a layer of dielectric material is at least one of a ~~hafnium containing material, HfO₂, ZrO₂, ZrSiO₂, HfSiO₂, and TaO₂;~~ HfO₂, ZrO₂, ZrSiO₂, HfSiO₂, and TaO₂;
providing into the etch chamber a process gas comprising carbon monoxide and a halogen containing gas; and
exposing the layer of dielectric material to a plasma formed from the process gas.
2. (Original) The method of claim 1 wherein the halogen containing gas comprises a chlorine containing gas.
3. (Original) The method of claim 1 wherein halogen gas comprises chlorine.
4. (Currently Amended) The method of claim 3 wherein said chlorine containing gas is ~~Cl₂~~; Cl₂.
5. (Currently Amended) The method of claim 4 wherein said providing step further comprises the step of:
supplying 20 to 300 sccm of ~~Cl₂~~ Cl₂ and 2 to 200 sccm of CO.
6. (Original) The method of claim 1 further comprising:
maintaining a gas pressure of between 2-100 mTorr.
7. (Original) The method of claim 5 further comprising the step of:
maintaining a gas pressure of 4 mTorr.

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RESPONSE TO OFFICE ACTION
Serial No. 10/805,890
Page 4 of 9

8. (Original) The method of claim 1 further comprising:
applying a bias power to a cathode electrode of 5 to 100 W.
9. (Original) The method of claim 6 further comprising:
applying a bias power to a cathode electrode of 20 W.
10. (Original) The method of claim 1 further comprising:
applying an inductive source power to an inductively coupled antenna of 200 to 2500 W.
11. (Original) The method of claim 5 further comprising:
applying an inductive source power to an inductively coupled antenna of 1100 W.
12. (Previously Presented) A method of plasma processing, comprising:
introducing into an process chamber a substrate having a layer of TaO₂;
introducing into the process chamber a process gas comprising carbon monoxide
and a halogen containing gas; and
exposing the layer of TaO₂ to a plasma formed from the process gas.
13. (Original) The method of claim 12 further comprising the step of:
maintaining the substrate at a temperature between 100 to 500 degrees Celsius.
14. (Original) The method of claim 12 further comprising the step of:
maintaining the substrate at a temperature of 350 degrees Celsius.
15. (Original) The method of claim 12 wherein the halogen containing gas comprises chlorine.

RESPONSE TO OFFICE ACTION**Serial No. 10/805,890****Page 5 of 9**

16. (Original) The method of claim 12 wherein the halogen containing gas is hydrogen chlorine.

17. (Currently Amended) A method of plasma processing, comprising:
introducing into the process chamber a process gas comprising carbon monoxide and a halogen containing gas; and
exposing a substrate, disposed in the process chamber and having at least partially exposed material containing at least one of ~~ZrO₂ and ZrSiO₂~~ ZrO₂ and ZrSiO₂, to a plasma formed from the process gas.

18. (Original) The method of claim 17 wherein the halogen containing gas comprises chlorine.

19-20. (Cancelled)

21. (Previously Presented) A method of plasma etching, comprising:
introducing into an etch chamber a substrate having a HfSiO₂ layer;
providing into the etch chamber a process gas comprising carbon monoxide and a halogen containing gas; and
exposing the HfSiO₂ layer to a plasma formed from the process gas.

22. (Previously Presented) The method of claim 21 wherein halogen gas comprises chlorine.